

LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1.(currently amended) A uniformly flexible stent ~~for holding open a blood vessel~~ comprising:

- a. a first loop containing section having loops, said first loop containing section arranged generally in a circumferential direction, the loops in said first loop containing section occurring at a first frequency;
- b. a second loop containing section having loops, said second loop containing section arranged generally in the circumferential direction, the loops in said second loop containing section also occurring at said first frequency;
- c. at least one of said first and second loop containing sections formed of a single, continuous, generally sinusoidal pattern; and
- d. a third loop containing section, said third loop containing section arranged generally in the circumferential direction, the loops in said third loop containing section occurring at a second frequency that is higher than said first frequency, said third loop containing section disposed in the generally circumferential space between each of said first and second loop containing sections to form a repeating pattern along the longitudinal axis of the stent and alternately joined to said first and second loop containing sections, said first, second and third loop containing sections forming a plurality of cells ~~and alternating sinusoidal patterns, and said first and second loop containing sections being joined together through said third loop containing section~~

~~without connection directly between said first and second loop containing sections;~~

e. the loops in said first, second and third loop containing sections being disposed and adapted to cooperate so that, components of said third loop containing section contribute to the cell's elongating or shortening when the stent is flexed ~~in a vessel~~.

Claim 2.(currently amended) A stent according to claim 1 wherein compensation, which occurs when cells on the outside of the a curve open in length, but narrow circumferentially and cells on the inside of the curve shorten in length but widen circumferentially, results in a more constant density of stent element area between the inside and the outside of the curve than if the cells on the outside only lengthened and cells on the inside only shortened.

Claim 3.(original) A stent according to claim 2, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the lumen.

Claim 4.(currently amended) A stent according to claim 1 wherein compensation, which occurs when cells on the outside of the a curve open in length, but narrow circumferentially and cells on the inside of the curve shorten in length but widen circumferentially, results in a more constant stent cell area between the inside and the outside of the curve than if the cells on the outside only lengthened and cells on the

inside only shortened.

Claim 5.(original) A stent according to claim 4, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the lumen.

Claim 6. (currently amended) A uniformly flexible stent ~~for widening a vessel in the human body~~ comprising:

- a. a plurality of first circumferential bands, each containing a single, continuous, generally sinusoidal pattern of loops at a first frequency;
- b. a plurality of second circumferential bands, each containing a single, continuous, generally sinusoidal pattern of loops at a second frequency higher than said first frequency, alternating with said first circumferential bands and periodically coupled to said first bands to form cells, and the second frequency loops are disposed in the generally circumferential space between each band of said first circumferential bands to form a repeating pattern along the longitudinal axis of the stent;
~~said first circumferential bands being joined together through said second circumferential bands without direct connection of any first circumferential bands to another first circumferential band;~~
- c. patterns of loops in said bands being disposed and adapted to cooperate so that the higher frequency band components contribute more than lower frequency bands to deformation during flexing of the stent.

Claim 7.(currently amended) A stent according to claim 6 wherein compensation, which occurs when cells on the outside of ~~the~~ a curve open in length, but narrow circumferentially and cells on the inside of the curve shorten in length but widen circumferentially, results in a more constant density of stent element area between the inside and the outside of the curve than if the cells on the outside only lengthened and cells on the inside only shortened.

Claim 8.(original) A stent according to claim 7, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the lumen.

Claim 9.(currently amended) A stent according to claim ~~[[4]]~~ 6 wherein the second circumferential bands are responsible for compensation, which occurs when cells on the outside of ~~the~~ a curve open in length, but narrow circumferentially and cells on the inside of the curve shorten in length but widen circumferentially, results in a more constant stent cell area between the inside and the outside of the curve than if the cells on the outside only lengthened and cells on the inside only shortened.

Claim 10.(original) A stent according to claim 9, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the

inside wall of the lumen.

11. (currently amended) A ~~stent for holding open a blood vessel~~ consisting essentially of a plurality of triangular cells comprising 3 functional loop sections, each triangular cell comprising:

- a. a first loop containing section, the first loop containing section arranged generally in the circumferential direction;
- b. a second loop containing section ~~joined~~ connected to the first loop containing section at a first junction ~~end point~~; and
- c. a third loop containing section having loops joined connected to the first loop containing section ~~at a second junction point on one end and joined~~ connected to the second loop containing section ~~at a third junction point on its other end~~, the first and second loop containing sections forming before expansion a first ~~single~~ continuous sinusoidal pattern at a first frequency and the third loop containing section forming a second single sinusoidal pattern at a second frequency lower than the first frequency, said first and second sinusoidal patterns consecutively alternating ~~circumferentially~~ along the longitudinal axis of the stent; and

the loops in one second sinusoidal pattern are 180° out of phase with loops in the adjacent second sinusoidal patterns along a longitudinal axis of the stent;

- d. wherein loops in said cells are disposed and adapted to cooperate so that, when the expanded stent is in a curved vessel, cells on the outside of the a

curve open in length, but narrow circumferentially whereas cells on the inside of the a curve shorten in length but widen circumferentially.

Claim 12.(currently amended) A stent according to claim 11 wherein compensation, which occurs when cells on the outside of the a curve open in length, but narrow circumferentially and cells on the inside of the a curve shorten in length but widen circumferentially, results in a more constant density of stent element area between the inside and the outside of the a curve than if the cells on the outside only lengthened and cells on the inside only shortened.

Claim 13.(original) A stent according to claim 12, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the lumen.

Claim 14.(currently amended) A stent according to claim 11 wherein the first single sinusoidal pattern is responsible for compensation, which occurs when cells on the outside of the curve open in length, but narrow circumferentially and cells on the inside of the curve shorten in length but widen circumferentially, results in a more constant stent cell area between the inside and the outside of the curve than if the cells on the outside only lengthened and cells on the inside only shortened.

Claim 15.(original) A stent according to claim 14, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the

inside wall of the lumen.

Claim 16. (currently amended) ~~A stent for widening a vessel in the human body~~
comprising:

a. a plurality of first meander patterns disposed circumferentially and having a single, continuous, generally sinusoidal pattern, said first meanders comprising alternating odd and even first meander patterns, said odd and even first meander patterns being 180° out of phase along a longitudinal axis of the stent; and

b. a plurality of second meander patterns intertwined with the first meander patterns to form triangular cells, each having three functional elements that deform during expansion and or flexing, said triangular cells forming a uniform mesh pattern consisting essentially of said cells along the stent, said first meander patterns and said second meander patterns disposed and adapted to cooperate so that after expansion of said stent, when said stent is disposed in a curved vessel, cells on the outside of the a curve open in length, but narrow circumferentially whereas cells on the inside of the a curve shorten in length but widen circumferentially.

Claim 17.(currently amended) A stent according to claim 16 wherein compensation, which occurs when cells on the outside of the a curve open in length, but narrow circumferentially and cells on the inside of the a curve shorten in length but widen circumferentially, results in a more constant density of stent element area between the inside and the outside of the a curve than if the cells on the outside only lengthened and

cells on the inside only shortened.

Claim 18.(original) A stent according to claim 17, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the lumen.

Claim 19.(currently amended) A stent according to claim 16 wherein the second meander patterns are responsible for compensation, which occurs when cells on the outside of the a curve open in length, but narrow circumferentially and cells on the inside of the a curve shorten in length but widen circumferentially, results in a more constant stent cell area between the inside and the outside of the a curve than if the cells on the outside only lengthened and cells on the inside only shortened.

Claim 20.(original) A stent according to claim 19, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the lumen.

Claim 21.(currently amended) A ~~multicellular stent for holding open a lumen,~~
~~comprising~~ consisting essentially of:

a. a plurality of even and odd vertical meander patterns, the odd vertical meander patterns being located between every two even vertical meander patterns and the odd vertical meander patterns being 180° out of phase with the even vertical

meander patterns along the longitudinal axis of the stent, said even and odd vertical

meander patterns each consisting of a single continuous, generally sinusoidal element;

b. a plurality of even and odd horizontal meander patterns, the odd horizontal meander patterns being located between every two even horizontal meander patterns,

c. the vertical meander patterns being intertwined with the horizontal meander patterns to form a plurality of triangular cells;

d. said horizontal meander patterns and said vertical meander patterns being disposed and adapted to cooperate so that after expansion of said stent within a curved lumen, cells on the outside of ~~the~~ a curve open in length, but narrow circumferentially whereas cells on the inside of ~~the~~ a curve shorten in length but widen circumferentially.

Claim 22.(currently amended) A stent according to claim 21 wherein the horizontal meander patterns are responsible for compensation, which occurs when cells on the outside of ~~the~~ a curve open in length, but narrow circumferentially and cells on the inside of ~~the~~ a curve shorten in length but widen circumferentially, results in a more constant density of stent element area between the inside and the outside of ~~the~~ a curve than if the cells on the outside only lengthened and cells on the inside only shortened.

Claim 23.(original) A stent according to claim 22, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the lumen.

Claim 24.(currently amended) A stent according to claim 21 wherein the even and odd horizontal meander patterns are responsible for compensation, which occurs when cells on the outside of ~~the~~ a curve open in length, but narrow circumferentially and cells on the inside of ~~the~~ a curve shorten in length but widen circumferentially, results in a more constant stent cell area between the inside and the outside of ~~the~~ a curve than if the cells on the outside only lengthened and cells on the inside only shortened.

Claim 25.(original) A stent according to claim 24, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the lumen.

Claim 26.(currently amended) An expandable stent ~~comprising~~ consisting essentially ~~of a plurality of enclosed flexible spaces, each of the plurality of enclosed flexible~~ spaces including:

- a) a first member having a first end and a second end;
- b) a second member having a first end and a second end;
- c) a third member having a first end and a second end;
- d) a fourth member having a first end and a second end; the first end of the first member communicating with the first end of the second member, the second end of the second member communicating with the second end of the third member, and the first end of the third member communicating with the first end of the fourth member;
- e) the first member and the second member with the curved portion at their ends forming a first loop;

f) the third member and the fourth member with the curved portion at their ends forming a second loop;

g) a fifth member having a first end and a second end;

h) a sixth member having a first end and a second end;

i) a seventh member having a first end and a second end;

j) an eighth member having a first end and a second end;

k) a ninth member having a first end and a second end; and

l) a tenth member having a first end and a second end, the first end of the fifth member communicating with the second end of the first member, the second end of the fifth member communicating with the second end of the sixth member, the first end of the sixth member communicating with the first end of the seventh member, the second end of the seventh member communicating with the second end of the eighth member, the first end of the eighth member communicating with the first end of the ninth member, the second end of the ninth member communicating with the second end of the tenth member, and the first end of the tenth member communicating with the second end of the fourth member;

m) the fifth member and the sixth member with the curved portion at their ends forming a third loop;

n) the seventh member and the eighth member with the curved portion at their ends forming a fourth loop; and

o) the ninth member and the tenth member with the curved portion at their ends forming a fifth loop, the third, fourth, and fifth loops disposed in the generally circumferential space between each of the first and second loops to form a pattern that

repeats at least two consecutive repetitions along the longitudinal axis of the stent, and
~~wherein~~ the first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, and tenth
members form a uniform ~~mesh~~ pattern of flexible cells; and

when the expanded stent is in a curved lumen, cells on the outside of ~~the~~
a curve at communication points of the first and fifth and fourth and tenth members
increase in length and at each of the first through fifth loops, the adjoining members
come closer to each other, to cause the cell to narrow circumferentially to compensate
for the increase in length, whereas cells on the ~~outside~~ inside of ~~the~~ a curve at
communication points of the first and fifth and fourth and tenth members decrease in
length and at each of the first through fifth loops, the adjoining members move apart, to
cause the cell to become wider circumferentially and compensate for the decrease in
length.

Claim 27.(currently amended) A stent according to claim 26 wherein the compensation
which occurs on the outside of ~~the~~ a curve and on the inside of ~~the~~ a curve results in a
more constant density of stent element area between the inside and the outside of ~~the~~ a
curve than if the cells on the outside only lengthened and cells on the inside only
shortened.

Claim 28.(original) A stent according to claim 27, wherein said stent is coated with a
medicine and said compensation results in a more even dose being applied to the
inside wall of the lumen.

Claim 29.(currently amended) A stent according to claim 26 wherein the third, fourth, and fifth loops are responsible for compensation which occurs on the outside of the curve and on the inside of ~~the~~ a curve results in a more constant stent area between the inside and the outside of ~~the~~ a curve than if the cells on the outside only lengthened and cells on the inside only shortened.

Claim 30.(original) A stent according to claim 29, wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the lumen.

Claims 31-41 (withdrawn)

Claim 42 (currently amended) A stent according to claim 1, wherein the loops in the first loop containing sections are all in phase.

Claim 43 (currently amended). A stent according to claim 1, wherein, upon expansion, the cells on the outside of a curved section of the stent become narrower as the cells elongate, and cells inside of ~~the~~ a curve become wider as the cells shorten.

Claim 44 (currently amended) A stent according to claim 6, wherein, upon expansion, the cells on the outside of a curved section of the stent become narrower as the cells elongate, and cells inside of ~~the~~ a curve become wider as the cells shorten.

Claim 45. (previously added) The stent according to claim 1, wherein said first loop containing section is formed of a single continuous, generally sinusoidal pattern.

Claim 46. (previously added) The stent according to claim 1, wherein said second loop containing section is formed of a single continuous, generally sinusoidal pattern.

Claim 47. (previously added) The stent according to claim 1, wherein each of said first loop containing sections and second loop containing sections are formed of a single continuous, generally sinusoidal pattern.

Claim 48. (cancelled)

Claim 49. (currently amended) A uniformly flexible stent ~~for holding open a blood vessel~~ comprising:

- a. a first loop containing section, said first loop containing section arranged generally in a circumferential direction, the loops in said first loop containing section occurring at a first frequency;
- b. a second loop containing section, said second loop containing section arranged generally in the circumferential direction, the loops in said second loop containing section also occurring at said first frequency, said second loop containing section being 180° out of phase with said first loop containing section along the longitudinal axis of the stent;

c. at least one of said first and second loop containing sections formed of a single, continuous, generally sinusoidal pattern; and

d. a third loop containing section, said third loop containing section arranged generally in the circumferential direction, the loops in said third loop containing section occurring at a second frequency that is higher than said first frequency, disposed in the generally circumferential space between each of said first and second loop containing sections to form a consecutively repeating pattern along the longitudinal axis of the stent and alternately joined to said first and second loop containing sections, said first, second and third loop containing sections forming a plurality of cells.

~~said first and second loop containing sections being joined together through said third loop containing section without connection directly between said first and second loop containing sections.~~

Claim 50. (new) A flexible stent consisting essentially of a plurality of enclosed flexible spaces, each of the plurality of enclosed flexible spaces including:

- a) a first extendible member having a first end and a second end;
- b) a second extendible member having a first end and a second end;
- c) a third extendible member having a first end and a second end;

wherein the first and second extendible members are fixedly connected thereto forming a continuous sinusoidal pattern, and the third extendible member is fixedly connected to one end of the first member and to the second end of the second member; and the third extendible member being disposed and adapted to cooperate so that, components of

said third extendible member contributes to the cell's elongating or shortening when the stent is flexed.

Claim 51. (new) A stent according to claim 1, wherein all cells on the outside of the curve have substantially equal size and all cells on the inside of the curve have substantially the same area.